



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/943,399	10/03/97	VAUGHN	S 97B058

EXXON CHEMICAL COMPANY
LAW TECHNOLOGY
P O BOX 2149
BAYTOWN TX 77522-2149

IM61/0910

EXAMINER

BULLOCK, I'

ART UNIT

1764

PAPER NUMBER

DATE MAILED: 09/10/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/943,399

Applicant(s)
Vaughn

Examiner
In Suk Bullock

Group Art Unit
1764



☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-22 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☒ Claim(s) 2, 4, 6-11, 13, 15, 17, 19, and 21 is/are allowed.

☒ Claim(s) 1, 3, 5, 12, 14, 16, 18, 20, and 22 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4 + 5

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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Information Disclosure Statement

The information disclosure statement filed 02/24/98 & 05/13/98 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Reference designated as AQ was listed both on Form-1449 filed on 02/24/98 & 05/13/98. However, a copy of the reference was not submitted at either submission dates.

Claim Objections

The numbering of claims is not accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims starting with the "second" 5-20^{have} been renumbered 7-22. The dependency in the originally numbered claim 8 and renumbered as claim 10 has been changed from claim "5" to a claim renumbered as "7"; the dependency in the originally numbered claim 9 and renumbered as claim 11 has been changed from claim "6" to a claim renumbered as "8"; and

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the dependency in the originally numbered claim 19 and renumbered as claim 21 has been changed from claim "7" to a claim renumbered as "9".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3, 5, 12, 14, 16, 18, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 4,579,999 to Gould et al. (hereinafter "Gould") in view of U.S. 4,677,243 to Kaiser.

Gould teaches a process for converting oxygenate feedstock, such as methanol, dimethyl ether or the like, to liquid hydrocarbons. See Abstract. Specifically, Gould teaches that the oxygenate feedstock is fed to a primary stage where it is converted to lower olefins and gasoline

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hydrocarbons plus water by dehydration of the oxygenate feedstock in the presence of a zeolite catalyst. Liquid hydrocarbons consisting essentially of C₅₊ gasoline range materials may be recycled to the primary stage reactor. See col. 3, lines 36-42 and col. 4, lines 9-29.

The difference between Gould and the claimed invention is that Gould employs a zeolitic catalyst whereas the claimed invention employs a non-zeolitic molecular sieve catalyst. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Gould and employed a non-zeolitic molecular sieve catalyst because Kaiser has taught that silicoaluminophosphate molecular sieve catalysts are extremely efficient catalysts for the conversion of oxygenate feedstock to light olefins and additionally have increased catalyst life over the zeolites (col. 5, lines 46-56 and col. 6, lines 22-47).

In view of the foregoing, the claims have failed to patentably distinguish over the applied art.

Allowable Subject Matter

Claims 2, 4, 6-11, 13, 15, 17, 19 and 21 are allowed.

The following is an examiner's statement of reasons for allowance: No prior art was found that would have disclosed or suggested the claimed method for increasing light olefin yield during conversion of oxygenates to olefins comprising contacting an oxygenate feed in a primary reactor with a non-zeolitic molecular sieve catalyst to produce a first product comprising light olefins, separating said product into light olefins and a heavy hydrocarbon fraction, passing the heavy hydrocarbon fraction to a separate auxiliary reactor and contacting said heavy hydrocarbon

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fraction with a second molecular sieve catalyst to promote conversion of said heavy hydrocarbons to light olefins.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to In Suk Bullock whose telephone number is (703) 308-3795. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Caldarola, can be reached on (703) 305-6118. The fax phone number for this Group is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

J. Bullock

I.B.

August 31, 1998

Glenn A. Caldarola
GLENN A. CALDAROLA
PRIMARY EXAMINER
GROUP 1700